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10/579,760	05/18/2006	Makoto Yoshida	SH-0053PCTUS	3570

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EXAMINER
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ARNADE, ELIZABETH

ART UNIT	PAPER NUMBER
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1791

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06/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,760	<b>Applicant(s)</b> YOSHIDA, MAKOTO	
	<b>Examiner</b> ELIZABETH ARNADE	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/18/2006</u> .   | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

1. Claims 1-20 are pending as amended on 5/18/2006.

#### ***Claim Objections***

2. Claim 1 objected to because of the following informalities: The abbreviation "OVD" should be written out in full as 'outside vapor deposition'. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1-20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claim 1, it is unclear what is meant by the term "returning positions thereof". The term "returning positions thereof" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear if "returning positions thereof" is meant to signify endpoints, a midpoint, intermediate points along which the burner moves or some other position relative to the initial material.

Claims 2-6 recite the limitation "the stopping period". There is insufficient antecedent basis for this limitation in the claim.

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Claims 5-6 and 15-18 recite the limitations "the deposition period", "the deposition weight" and "the number". There is insufficient antecedent basis for this limitation in the claim.

Claims 7 and 19 recite the limitation "said certain period". There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the diameter". There is insufficient antecedent basis for this limitation in the claim.

As for claims 11 and 20, it is unclear what is meant by the phrase "in one of the methods" since the manufacturing is according to a single method claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1, 11 and 20 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication US2002/0062666, Ooishi et al. ('Ooishi' hereinafter).

As for claim 1, Ooishi teaches a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said

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burner and said initial material; and stopping said relative reciprocation in a predetermined period at returning positions thereof (Abstract; Fig. 1).

As for claim 11 and 20, Ooishi teaches an optical fiber base material which is made in one of the methods of manufacturing optical fiber base material according to one of the methods of claim 1 (paragraph [0002], Fig. 1); an optical fiber base material which is made in one of the methods of manufacturing optical fiber base material according to one of the methods of claim 2 (paragraph [0002], Fig. 1). The examiner notes both claim 11 and 20 are product by process claims, which are not limited to the manipulations of the recited steps, only the structure; therefore, since the method of claim 2 does not provide any additional structure to an optical fiber base material produced by the method of claim 1, the optical fiber base material of claim 20 which relies on the method of claim 2 is fully anticipated by Ooishi.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi as applied to claim 1 above.

Ooishi teaches the method of claim 1 as detailed above.

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Ooishi does not expressly disclose wherein the stopping period is no less than 3 seconds and no more than 60 seconds.

Ooishi does disclose wherein the stopping period is one second (paragraph [0044]) and wherein the stopping period may be adjusted (paragraph [0042]).

It would be obvious to one of ordinary skill in the art at the time the invention was made to make the stopping period no less than 3 seconds and no more than 60 seconds. The motivation is the rationale provided by Ooishi is that adjustment to the stopping period may be made depending on factors such as the burner used and the distance from the burner up to the surface of a soot body (paragraph [0042]).

Additional motivation is provided in that unless there is evidence indicating such parameter is critical it has been held that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

9. Claim 3 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi as applied to claim 1 above in view of Japanese Patent Application Publication JP2000-256034, Yasumoto et al., (‘Yasumoto’ hereinafter). See attached machine translated version of JP2000-256034 for English translation.

Ooishi teaches the method of claim 1 and 2 as detailed above.

Ooishi does not expressly disclose wherein in the stopping period during the relative reciprocation, combustion gas is decreased.

Yasumoto discloses a closely related invention of a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said burner and said initial material (Abstract; Fig. 1) wherein during the relative reciprocation, combustion gas is decreased (paragraph [0004]).

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the decrease in combustion gas of Yasumoto with the stopping period of Ooishi. The motivation is the rationale provided by Yasumoto in that adjusting the flow rate of the combustion gas allows soot density to be made uniform, a lowering in surface cracks, and suppression of the fluctuation in the outside diameter of a soot preform (Abstract).

10. Claim 4 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi as applied to claim 1 above in view of US Patent Application Publication US2003/0070450, Nakamura et al., ('Nakamura' hereinafter).

Ooishi teaches the method of claim 1 and 2 as detailed above.

Ooishi does not expressly disclose wherein in the stopping period during the relative reciprocation, the amount of material gas is increased.

Nakamura discloses a closely related invention of a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said

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initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said burner and said initial material (Abstract) and wherein during the relative reciprocation, the amount of material gas is increased (paragraph [0026]).

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the increase of material gas of Nakamura with the stopping period of Ooishi. The motivation is the rationale provided by Nakamura in that increasing the amount of material gas causes a longer effective portion length (of a soot body) and a shorter ineffective portion length (of a soot body) (paragraph [0035]).

11. Claim 5-10, 15, 17 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi as applied to claim 1 and 2 above in view of Japanese Application Publication JP09-278477, Sayaka, ('Sayaka' hereinafter). See attached machine translated version of JP09-278477 for English translation.

Ooishi teaches the method of claim 1 and 2 as detailed above.

As for claim 5-7, 9, 15, 17 and 19, Ooishi does not expressly disclose wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, and the stopping period during the relative reciprocation is changed continuously depending on said determined condition; wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, and the stopping period during the relative reciprocation is changed step-by-step depending on said determined condition; wherein if the diameter of said optical fiber base material increases, said certain period in which



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said burner stops is extended; wherein if said deposition weight increases, said certain period, in which said burner stops, is extended.

Sayaka teaches a closely related invention of a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said burner and said initial material (Abstract; fig 1) and wherein the deposition weight is primarily set as a condition, and a speed of the burner during the relative reciprocation is changed continuously depending on said determined condition (paragraph [0005-0006]); wherein the deposition weight is primarily set as a condition, and a speed of the burner during the relative reciprocation is changed step-by-step depending on said determined condition (paragraph [0005-0006]); wherein if the diameter of said optical fiber base material increases, said certain period in which said burner remains at a location of the initial material is extended (paragraph [0005-0006]); wherein if said deposition weight increases, said certain period, in which said burner remains at a location of the initial material, is extended (paragraph [0005-0006]).

The limitation of claims 5-7, 9, 15, 17 and 19 recite that the stopping period is changed or that the certain period in which said burner stops is extended; thus allowing the burner to stay at a location along the starting material for an extended or shortened period of time.

Although Sayaka does not expressly disclose that the burner is stopped for a stopping period, Sayaka does teach that a speed of the burner slows or is changed

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continuously and step-by-step (stage-by-stage) along a length of the starting material based on an increase in a diameter or weight of the optical fiber base material (paragraph [0005-0006]); therefore allowing the burner to stay at a location along the starting material for an extended or shortened period. Thus, Sayaka teaches the same function of the limitations of claims 5-7, 9, 15 and 19.

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the teachings of Sayaka with the method of Ooishi such that wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, the stopping period during the relative reciprocation may be changed continuously depending on said determined condition; wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, the stopping period during the relative reciprocation may be changed step-by-step depending on said determined condition; wherein if the diameter of said optical fiber base material increases, said certain period in which said burner stops may be extended; wherein if said deposition weight increases, said certain period, in which said burner stops, may be extended. The motivation to include the teachings of Sayaka with Ooishi is the rationale provided by Sayaka in that allowing for the burner to stay at a location along the starting material for an extended or shortened period of time based on diameter and weight changes suppresses the fluctuation in the outside diameter of the initial material(Abstract; paragraph [0005-0006])

As for claims 8 and 10, Ooishi and Sayaka combine to teach the method of claim 7 as detailed above.

Neither Ooishi nor Sayaka expressly disclose wherein if said deposition period increases, said certain period, in which said burner stops, is extended; wherein if the number of relative reciprocation increases, said certain period, in which said burner stops, is extended.

It is known in the art that there is a long felt need to overcome the issue of soot uniformity such that the diameter of a sooty body is uniform in the longitudinal direction as referenced by Ooishi (paragraph [0005-0008]). Ooishi also teaches that differences in the amount of soot deposited over an area (surface area of the soot) can accelerate differences in the outer diameter of a base material/soot body (paragraph [0005]).

It would be obvious to one of ordinary skill in the art at the time the invention was made to extend said certain period in which said burner stops if said deposition period increases; to extend said certain period in which burner stops if the number of relative reciprocation increases. If the deposition period or relative reciprocation increases over the initial material, the outer diameter of the base material may differ in the amount of soot deposited in one area versus another and thus accelerate differences in the outer diameter of the overall base material/ soot body; therefore it would be obvious to extend the certain period in which the burner stops over a given portion having a smaller diameter to correct for fluctuations in diameter. The motivation to correct for diameter fluctuation is the rational provided by Ooishi in that to obtain an optical fiber preform of

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good quality, it is important to reduce the fluctuation of the outer diameter of a soot boy as much as possible (paragraph [0006]).

12. Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi in view of Yasumoto as applied to claim 3, and further in view of Nakamura.

Ooishi and Yasumoto combine to teach the method of claim 3 as detailed above.

Neither Ooishi nor Yasumoto expressly disclose wherein in the stopping period during the relative reciprocation, the amount of material gas is increased.

Nakamura discloses a closely related invention of a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said burner and said initial material (Abstract) and wherein during the relative reciprocation, the amount of material gas is increased (paragraph [0026]).

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the increase of material gas of Nakamura with the stopping period of Ooishi. The motivation is the rational provided by Nakamura in that increasing the amount of material gas causes a longer effective portion length (of a soot body) and a shorter ineffective portion length (of a soot body) (paragraph [0035]).

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13. Claim 16 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi in view of Yasumoto as applied to claim 3 above, and further in view of Sayaka.

Ooishi and Yasumoto combine to teach the method of claim 3 as detailed above.

Neither Ooishi nor Yasumoto expressly disclose wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, and the stopping period during the relative reciprocation is changed continuously depending on said determined condition; wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, and the stopping period during the relative reciprocation is changed step-by-step depending on said determined condition.

Sayaka teaches a closely related invention of a method of manufacturing optical fiber base material employing the OVD process, in which a burner is relatively reciprocated against and along an initial material to deposit glass fine particles on said initial material to produce an optical fiber base material, comprising steps of: relatively reciprocating said burner and said initial material (Abstract; fig 1) and wherein the deposition weight is primarily set as a condition, and a speed of the burner during the relative reciprocation is changed continuously depending on said determined condition (paragraph [0005-0006]); wherein the deposition weight is primarily set as a condition, and a speed of the burner during the relative reciprocation is changed step-by-step depending on said determined condition (paragraph [0005-0006]).

The limitation of claims 16 and 18 recite that the stopping period is changed; thus allowing the burner to stay at a location along the starting material for an extended or shortened period of time.

Although Sayaka does not expressly disclose that the burner is stopped for a stopping period, Sayaka does teach that a speed of the burner is changed continuously and step-by-step (stage-by-stage) along a length of the starting material based on an increase in a diameter or weight of the optical fiber base material (paragraph [0005-0006]); therefore allowing the burner to stay at a location along the starting material for an extended or shortened period. Thus, Sayaka teaches the same function of the limitations of claims 16 and 18.

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the teachings of Sayaka with the method of Ooishi such that wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, the stopping period during the relative reciprocation may be changed continuously depending on said determined condition; wherein one of the deposition period, the deposition weight, or the number of relative reciprocation is primarily set as a condition, the stopping period during the relative reciprocation may be changed step-by-step depending on said determined condition; wherein if the diameter of said optical fiber base material increases, said certain period in which said burner stops may be extended; wherein if said deposition weight increases, said certain period, in which said burner stops, may be extended. The motivation to include the teachings of Sayaka with Ooishi is the rationale provided by

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Sayaka in that allowing for the burner to stay at a location along the starting material for an extended or shortened period of time based on diameter and weight changes suppresses the fluctuation in the outside diameter of the initial material (Abstract; paragraph [0005-0006]).

### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH ARNADE whose telephone number is (571)270-7664. The examiner can normally be reached on M-F, 9-5 p.m., except alternate F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/E. A./  
Examiner, Art Unit 1791

/Jason L Lazorcik/  
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